

Developing an SAP Mobile Inventory App with UI5 vs. ITS Mobile

If you're looking to develop a mobile app for SAP inventory management, or you need to upgrade an existing app, one of your key decisions is whether to develop your new app using SAP UI5 or ITS Mobile.

Your choice will have a huge impact on your app's usability, features, hardware compatibility, and security. Ultimately, if you want the best results in all of these areas and in your inventory management workflows, you should choose SAP UI5.

SAP's UI5 platform is the latest technology for developing SAP mobile apps, and it offers a number of key advantages over ITS Mobile, which is still supported by SAP but is a much older platform. While ITS Mobile was great during its time, it's not well-suited for today's mobile performance, hardware, and security needs, and that's why SAP now offers UI5.

One of the best ways to understand SAP UI5's key advantages is to take a look at an actual case study. In this article, we'll review a success story involving a company that was originally going to use ITS Mobile but chose UI5 instead.

Our team at Havensight Consulting led the development of this app using SAP UI5 and our pre-built Mobile Inventory Templates (MIT), and we were able to meet all of the company's requirements without the potential drawbacks of ITS Mobile's limitations.

To understand why, let's take a look at this project, why SAP UI5 was the better option, and how we worked together with our client and our pre-built templates to achieve these results.

Using SAP UI5 and Time-Saving Templates to Build a Mobile Inventory App

A global manufacturer of lubricating oils, solvents, waxes, synthetics, fuels, and fuel-related products needed to develop an SAP mobile app for inventory management, to replace its existing paper-based processes. The company needed an app for SAP S/4 HANA that would support its inventory management needs, its current customized SAP transactions, and provide offline capabilities as well as compatibility with multiple mobile device types.

Originally, the company planned to build its new app using SAP's ITS Mobile platform, despite the fact that it had limitations and potential security vulnerabilities that were not ideal for its new inventory app. However, after engaging with Havensight Consulting to roll out a mobile solution for field service and SAP's Service and Asset Manager, it tapped Havensight once again and received a strong recommendation to build its new app using the latest native SAP UI5 mobile platform as an Alternative to ITS Mobile.

Working with Havensight developers, the company was able to successfully deploy a new app using Havensight's Mobile Inventory Templates (MIT), built with native SAP UI5 technology, and the new solution met all of its business requirements, enhanced usability, strengthened security, and dramatically sped up deployment.

Quick Summary

COMPANY

U.S.-based global chemicals manufacturer with 12 facilities and 180 mobile operators.

PROBLEM

A paper-based inventory management process needed to be replaced with a new future-forward, mobile and digital solution. The new mobile app had to support existing customized SAP transactions, provide offline capabilities, and needed to support multiple mobile device types. SAP's ITS Mobile platform was unable to address all of these requirements, but the company had initially consigned itself to live with those limitations.

SOLUTION

Havensight Consulting recommended a better alternative and worked with the customer to quickly develop and deploy a new SAP-native mobile inventory management solution using SAP's native UI5 technology. The new solution avoided the limitations and vulnerabilities of ITS Mobile, and Havensight used its Mobile Inventory Templates (MIT) to build the custom transaction capabilities that were needed, plus support for offline transactions and multiple mobile device types, along with superior usability and security.

RESULTS

- New SAP-native mobile inventory management app
- Fast deployment within weeks of initial approval
- Full support for existing SAP back-end and custom transactions
- Offline transaction capabilities to support business processes
- Support for handheld and vehicle-mounted mobile devices
- Improved user experiences with simpler mobile workflows
- Faster, easier, more accurate inventory transactions
- Much stronger device security and user authentication including SSO
- No licensing fees or limits on number of users or sites
- Customer owns the resulting code, screens and solution
- Long-term coding and support still available from Havensight

THE PROBLEM

This manufacturer had been using a paper-based process for inventory management and transactions, and it needed to develop a new app to support its ongoing business needs and its current customized SAP transactions.

Originally, they planned to use SAP's older ITS Mobile development platform to build the app, but the company also needed its new solution to provide offline transaction capabilities and support multiple mobile device types and form factors, including handheld and vehicle-mounted mobile computers. ITS Mobile couldn't support these latter requirements, and its older Telnet-based security and authentication methods were not ideal either.

In addition to solving these challenges, the customer wanted to move quickly. They wanted to develop an app fast, so it could be validated at one of its warehouse and distribution centers before rolling it out globally across its 12 plants, warehouses and distribution facilities.

THE SOLUTION

To help determine the best way forward, the customer reached out to Havensight Consulting, with whom they had been working on a mobile solution for maintenance and asset management using SAP Service and Asset Manager. The customer was particularly interested in learning more about Havensight's Mobile Inventory Templates (MIT), which are pre-built templates that help developers accelerate mobile app development and quickly build out the SAP inventory transaction capabilities that they needed.

During the discussion, Havensight recommended MIT as an alternative to ITS Mobile to build out its new solution using the latest SAP-native UI5 framework. This would allow them to quickly develop and deploy the solution needed, with support for its existing inventory management processes, custom SAP transactions, offline capabilities, and different device types.

The company leaned on Havensight to do all the initial app coding, screen design and development, in consultation with the customer's business team, and this helped further expedite the solution's deployment. Once the work was completed, the ownership of all the code, screens and the app was transferred to the customer, without licensing fees or perpetual costs, and Havensight is now available to provide any future coding or support as needed.

DEVELOPMENT

On the basis of Havensight's recommendations, the manufacturer kicked off its new mobile app project. It hired Havensight to handle the core coding, screen design, and app development, and, in less than a week after the project was greenlit, Havensight was moving quickly.

Havensight used its proven project methodology to work with the customer and quickly determine the full scope and requirements of the project, including the key custom transactions that the company needed, all the functionality the app needed to deliver, and all the hardware, infrastructure and security that needed to be involved.

Havensight applied its development and configuration "sprints" approach, attacking the custom requirements and most complex requirements first. This included a special focus on the custom SAP transactions that the business needed to enable and to integrate with its SAP back end.

One example was a special stock transport order customization, where the company needed to maintain a unified process across 12 global facilities that would allow inventory to be transferred from one plant to an in-transit plant and ultimately to a receiving plant in SAP. Once the inventory was received, it needed a goods issue to be created and a goods receipt to be issued in the receiving plant.

Another was the use of QCI conversions using SAP's Quantity Conversion Interface. Since the company's products are often liquids and fluids, its inventory quantities are based on volumes, and these can change based on temperature, humidity, and other conditions in vats. The company used SAP QCI algorithms to automatically calculate and adjust inventory quantities based on observed conditions that were entered into SAP, and it needed this same functionality in its new mobile app.

Support for custom assignment of task cues was also needed. The business needed the ability to assign picks, pushes, and other cued warehouse tasks to different users. This would be helpful in the event that work assignments needed to be changed due to employee absences or unavailability.

The company also needed support for the QR codes that it had printed and placed around its warehouses. It needed workers to be able to scan those codes and use the encoded data to automatically pre-populate their mobile app and SAP forms with the material and batch numbers for specific products.

Finally, the customer needed some custom mobile app functionality for its outbound deliveries, to allow its workers to capture e-signatures, attach them to outbound deliveries, and take photos of products and pallets once they were packed and then loaded onto delivery trucks. This was needed for quality assurance and proof of condition.

Once these and other requirements were documented, Havensight used its pre-built Mobile Inventory Templates and SAPUI5's framework to quickly code, design, and enable all of these workflows and custom capabilities in the new mobile app. But there was one additional capability that was absolutely crucial to the company's inventory management needs.

DEVELOPMENT *(Continued)*

Within its refineries and warehouse, the manufacturer was struggling with dead spots in its wireless networking coverage, and it also had workflows that needed to take place outside the four walls, in its yard, where inventory transactions needed to be performed beyond network coverage.

To address the coverage issues and enable inventory transactions outside the four walls, Havensight's team used SAP's improved UI5 platform and infrastructure to enable full offline capabilities. Havensight created new offline procedures that allow transactions to be performed offline and later synced automatically with SAP.

RESULTS

After successfully completing a comprehensive and iterative development process, including screen design, coding, and creation of all required functionality and SAP integration, the new app was deployed among super-users for validation at a warehouse in Washington, D.C.

The new app was initially deployed on Zebra MC9300 touch handheld mobile computers with built-in keypads for additional data entry capabilities. Both the app and new hardware passed all tests and met all requirements, and they began to generate positive results almost immediately.

Both front-line workers and managers found the new inventory app and Zebra's Android mobile interface to be very intuitive and easy to use. Since workflows matched the company's existing processes, right down to custom functionality, it enabled a seamless transition. The app's digital automation, modern HTML5 interface, and its simple screens, fast response times, and exceptional reliability made it an instant hit with workers.

Importantly, the new app also provided all the transactions and custom capabilities needed, including all inventory transactions, e-signature capture, photo and video capture, barcode and QR code scanning, and offline capabilities. In fact, workers could download all the PO receipts, transactions or other tasks they would need to work on, and if they left or lost online coverage, those transactions could still be performed and logged. Later, once online coverage was restored, they could view a dashboard of those transactions and choose to have them automatically synced with SAP, or they could modify or delete them if needed.

The app was able to perform hundreds of transactions offline, each with details such as line items, returns, or other additional detail, and it could handle a large volume of these transactions and data points in microseconds.

Additionally, thanks to using modern SAP authentication, native SAP technology, and direct connection to SAP via OData, the app is far more secure than it would be had it been developed with ITS Mobile technology. This is already helping keep the company's app and data much safer, especially given the serious security vulnerabilities that exist with older, client-to-Telnet apps and frameworks.

Once the initial rollout and validation were complete, the manufacturer was able to deploy its new inventory app across all 12 of its global facilities and install it on additional new devices such as forklift-mounted and vehicle-mounted mobile computers. Since the app is compatible with all modern devices and peripherals, it can be deployed on virtually any mobile hardware, with support for a wide range of screen sizes and form factors.

The company now owns the app, code, and screens as well. Since Havensight provided the app and all development services as a single fixed-cost project, there are no licensing fees, and there are no contracts or fees based on the number of users or mobile devices. The customer completely owns the final product, and it can maintain and develop the app into the future, as desired. Or, it can call upon Havensight whenever needed, to help with more complex coding, design, or support.

To learn more about developing SAP mobile apps with Havensight MIT templates and comprehensive app development services, contact us now to schedule a free consultation and start a conversation.



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